

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Currently amended) A method for managing multicast groups in an InfiniBand system area network, the method comprising:

end nodes in the InfiniBand system area network being final destinations for packets;

end nodes not including switches or routers, wherein packets are not routed through the end nodes;

receiving, by a Subnet Administration in a first InfiniBand end node, a join request from a second InfiniBand end node for joining a multicast group, wherein the second end node is connected to a first switch and wherein the join request is a send-without-receive request, and wherein the first InfiniBand end node is included within the InfiniBand system area network;

determining whether the multicast group exists; and

if the multicast group does not exist, creating, by the Subnet Administration in the first InfiniBand end node, the multicast group and routing the first switch to discard all packets for the multicast group.

2. (Currently amended) The method of claim 1, wherein the step of creating the multicast group includes assigning an InfiniBand multicast local identifier (MLID) to the multicast group, and further wherein the multicast group is not created by a switch.

3. (Original) The method of claim 1, wherein the step of routing the first switch includes inserting an entry for the multicast group in a multicast routing data structure in the first switch.

4. (Previously presented) The method of claim 3, wherein the multicast routing data structure is indexed by an InfiniBand multicast local identifier (MLID).

5. (Original) The method of claim 3, wherein the entry for the multicast group includes an indication that packets are to be discarded.

6. (Currently amended) The method of claim 1, further comprising:

responsive to a join request from a receiving end node, updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving end node.

7. (Currently amended) The method of claim 6, further comprising:  
receiving a leave request from a third end node for leaving the multicast group;  
determining whether a single end node remains in the multicast group; and  
if a single end node remains in the multicast group, routing a switch closest to the single end node to discard all packets for the multicast group.
8. (Currently amended) A method for managing multicast groups in an InfiniBand system area network, the method comprising:  
end nodes in the InfiniBand system area network being final destinations for packets;  
end nodes not including switches or routers, wherein packets are not routed through end nodes;  
receiving, by a Subnet Administration in a first InfiniBand end node, a leave request from a second end node for leaving a multicast group, wherein the multicast group has a first member at a third end node connected to a first switch, and wherein the multicast group is identified using an InfiniBand multicast local identifier (MLID), and wherein the first InfiniBand end node is included in the InfiniBand system area network;  
determining whether a single end node remains in the multicast group; and  
if a single end node remains in the multicast group, routing, by the Subnet Administration in the first InfiniBand end node, the first switch to discard all packets for the multicast group.
9. (Original) The method of claim 8, wherein the first member is a send-without-receive member.
10. (Original) The method of claim 8, wherein the step of routing the first switch includes inserting an entry for the multicast group in a multicast routing data structure in the first switch.
11. (Previously presented) The method of claim 10, wherein the multicast routing data structure is indexed by the InfiniBand multicast local identifier (MLID).
12. (Original) The method of claim 10, wherein the entry for the multicast group includes an indication that packets are to be discarded.

13. (Currently amended) The method of claim 8, further comprising:  
responsive to a join request from a receiving end node, updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving end node.
14. (Currently amended) An apparatus for managing multicast groups in an InfiniBand system area network, the apparatus comprising:  
end nodes in the InfiniBand system area network being final destinations for packets;  
end nodes not including switches or routers, wherein packets are not routed through end nodes;  
a Subnet Administration in a first InfiniBand end node for receiving a join request from a second end node for joining a multicast group, wherein the second end node is connected to a first switch and wherein the join request is a send-without-receive request, and wherein the first InfiniBand end node is included within the InfiniBand system area network;  
determination means for determining whether the multicast group exists;  
creation means in the first InfiniBand end node for creating the multicast group, wherein the multicast group is not created by a switch; and  
the Subnet Administration for routing the first switch to discard all packets for the multicast group if the multicast group does not exist.
15. (Previously presented) The apparatus of claim 14, wherein the creation means includes means for assigning an InfiniBand multicast local identifier (MLID) to the multicast group.
16. (Original) The apparatus of claim 14, wherein the routing means includes means for inserting an entry for the multicast group in a multicast routing data structure in the first switch.
17. (Currently amended) The apparatus of claim 14, further comprising:  
means, responsive to a join request from a receiving end node, for updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving end node.
18. (Currently amended) An apparatus for managing multicast groups in an InfiniBand system area network, the apparatus comprising:  
end nodes in the InfiniBand system area network being final destinations for packets;  
end nodes not including switches or routers, wherein packets are not routed through end nodes;

a Subnet Administration in a first InfiniBand end node for receiving a leave request from a second end node for leaving a multicast group, wherein the multicast group has a first member at a third end node connected to a first switch, and wherein the multicast group is identified using an InfiniBand multicast local identifier (MLID), and wherein the first InfiniBand end node is included within the InfiniBand system area network;

determination means for determining whether a single end node remains in the multicast group;  
and

routing means for routing, by the Subnet Administration in the first InfiniBand end node, the first switch to discard all packets for the multicast group if a single end node remains in the multicast group.

19. (Original) The apparatus of claim 18, wherein the first member is a send-without-receive member.

20. (Original) The apparatus of claim 18, wherein the routing means includes means for inserting an entry for the multicast group in a multicast routing data structure in the first switch.

21. (Currently amended) The apparatus of claim 18, further comprising:

means, responsive to a join request from a receiving end node, for updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving end node.

22. (Currently amended) A computer program product, stored in a computer readable medium, for managing multicast groups in an InfiniBand system area network, the computer program product comprising:

end nodes in the InfiniBand system area network being final destinations for packets;  
end nodes not including switches or routers, wherein packets are not routed through end nodes;  
instructions for receiving, by a Subnet Administration in a first InfiniBand end node, a join request from a second end node for joining a multicast group, wherein the second end node is connected to a first switch and wherein the join request is a send-without-receive request, and wherein the first InfiniBand end node is included within the InfiniBand system area network;  
instructions for determining whether the multicast group exists; and  
instructions for creating, by the Subnet Administration in the first InfiniBand end node, the multicast group and routing the first switch to discard all packets for the multicast group if the multicast group does not exist, wherein the multicast group is not created by a switch.

23. (Currently amended) A computer program product, stored in a computer readable medium, for managing multicast groups in an InfiniBand system area network, the computer program product comprising:

end nodes in the InfiniBand system area network being final destinations for packets;

end nodes not including switches or routers, wherein packets are not routed through end nodes;

instructions for receiving, by a Subnet Administration in an InfiniBand end node, a leave request from a second end node for leaving a multicast group, wherein the multicast group has a first member at a third end node connected to a first switch, and wherein the multicast group is identified using an InfiniBand multicast local identifier (MLID);

instructions for determining whether a single end node remains in the multicast group; and

instructions for routing, by the Subnet Administration, the first switch to discard all packets for the multicast group if a single end node remains in the multicast group.